BlackBerry AtHoc

Telephony Alerting System Installation and Configuration Guide

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Contents

Getting Started

This guide describes how to configure and use Telephony Alerting System (TAS) features.

The Hosted TAS provides hosted telephony services for BlackBerry AtHoc through AtHoc Cloud Services.

TAS is a plug-in of NDS, which is a dedicated server that processes and delivers alert messages from the NDS host services (plug-ins).

For more information about NDS and its prerequisites, see the *BlackBerry AtHoc NDS Installation and Configuration Guide*.

NDS and TAS plug-ins have matching version numbers. Install the version of NDS that matches the version number for TAS.

Cisco Unified Communications Manager

Use Cisco Unified Communications Manager (CUCM) to manage the telephony lines that you use for alerts sent to VOIP devices.

NDS console

Use the NDS console to manage the NDS services and accounts.

Prerequisite:

The NDS host services must be set up and you must have NDS administration privileges. As an NDS administrator, open the NDS console using the following server address:

`\\AtHocENS\DeliveryServer\Tools\NDSConsole`

After the system is set up, you can set a resource pool on the NDS server.

Text-to-speech requirements

Starting with version 2.9.6, TAS supports the VTAP (VoiceText Access Protocol) API .net programming language for text-to-speech (TTS). Depending on the locales you need to cover by the TAS installation, you may need to configure TTS with Neospeech.

TTS service on NDS

Before configuring TTS, complete the following required tasks:

- Install VoiceText engine for the required languages.
- Install the VoiceText server. For more information, see the VoiceText Engine for Windows OS Installation Manual v3.11.11.x.
- Enable audio and video on the Windows server.

Enable audio and video on the Windows server

If you are using TTS, you must enable audio and video on the Windows Server. The steps are different for 2008 R2 and 2012 R2. The last task for enabling is optional and required only if you want to test audio functions through Remote Desktop Connection Client.

Windows Server 2008 R2

This section describes how to configure audio and video playback on a Remote Desktop Session Host (RD Session Host) server.

Install the Desktop Experience feature

Important: Installing the Desktop Experience requires the computer to be restarted.

1. Click **Start**, hover over **Administrative Tools**, and click **Server Manager**.
2. In the left pane, click **Features**.
3. In the **Features Summary** section, click **Add Features**.
4. On the **Select Features** page, select **Desktop Experience**.
5. Review the required features that need to be installed with the Desktop Experience feature, and then click **Add Required Features**.
6. Click **Next**.
7. On the **Confirm Installation Selections** page, confirm that you want to install the Desktop Experience feature.
8. Click **Install**. The Installation Progress page displays the progress of the installation.
9. To complete the installation, restart the server. To restart the server, click **Close** and then click **Yes**.
10. After the server restarts, log on to the computer with the same user account. Wait for the remaining steps of the installation to finish.
11. When the **Installation Results** page appears, confirm that the installation of Desktop Experience succeeded, and click **Close**.
12. To confirm that Desktop Experience is installed, complete the following steps:
    a. Start Server Manager.
    b. In the left pane, click **Features**.
    c. In the **Features Summary** section, confirm that Desktop Experience is listed as installed.

    After you install Desktop Experience, the Windows 7 components and features, such as Windows Media Player, appear under All Programs on the Start menu.

Start the Windows audio service

This section describes how to start the Windows Audio service on the RD Session Host server.

You must have membership in the local Administrators group, or equivalent, on the RD Session Host server that you plan to configure.

1. On the RD Session Host server, click **Start** to open the Services snap-in.
2. Hover over **Administrative Tools**, and click **Services**.
3. If the **User Account Control** dialog appears, confirm that the action it displays is what you want, and then click **Yes**.
4. In the **Services** pane, right-click **Windows Audio**, and click **Properties**.
5. From the **Startup type** box, on the **General** tab, select **Automatic**, and click **Apply**.
6. From **Service status**, click **Start**.
7. Click **OK**.
8. Confirm that the Status column for the Windows Audio service displays Started.

Enable the "Allow audio and video playback redirection group policy" setting

To provide audio and video playback when connecting to a server that runs Windows Server 2008 R2, you must enable the "Allow audio and video playback redirection Group Policy" setting.

1. Open the **Allow audio and video playback redirection Group Policy** setting by navigating to the following screen: **Computer Configuration** > **Policies** > **Administrative Templates** > **Windows Components** > **Remote Desktop Services** > **Remote Desktop Session Host** > **Device and Resource Redirection**.
2. Configure the setting by using either the Local Group Policy Editor or the Group Policy Management Console (GPMC).

Tip: For more information about Group Policy settings for Remote Desktop Services, see the Remote Desktop Services Technical Reference.

(Optional) Enable audio and video playback

This section describes how to enable audio and video playback on the RD Session Host server.

1. On the RD Session Host server, open Remote Desktop Session Host Configuration:
   a. Click **Start** and hover over **Administrative Tools**, and then point to **Remote Desktop Services**.
   b. Click **Remote Desktop Session Host Configuration**.
2. If the User Account Control dialog appears, verify that the action it displays is what you want, and click **Yes**.
3. From **Connections**, right-click the name of the connection to be configured (for example, RDP-Tcp), and click **Properties**.
4. From the **Client Settings** tab, clear the **Audio and video playback** check box.
5. Click **OK**.

   Note: The changes take effect the next time the user connects to the RD Session Host server.

Tip: For more information about Group Policy settings for Remote Desktop Services, see the Remote Desktop Services Technical Reference.

Windows server 2012 R2

By default, Windows Server 2012 has audio disabled. This section describes the steps to configure audio and video playback on a RD Session Host server.

1. Start the Windows Audio service.
2. Enable the **Allow audio and video playback redirection Group Policy** setting.
3. Optionally, enable remote audio playback in the Remote Desktop Connection client.

Start the Windows Audio service

1. Log in to the server.
2. Click the **Start** menu and click **Administrative Tools**.
3. Click the **Services** shortcut and double-click the **Windows Audio** service.
4. Set the **Startup** type to **Automatic**.
5. To use audio immediately after setup, open the **Properties** window for the service and click the **Start** button.
6. Click the **Start** menu and click **Administrative Tools**.
7. Click the **Services** shortcut and double click **Windows Audio Endpoint Builder** service.
8. Set the **Startup** type to **Automatic**.
9. To use audio immediately after setup, open the **Properties** window for the service and click the **Start** button.

Enable audio redirection

1. Right-click the **Start** button then type **Run** in the search field or press **Windows + R**.
2. Type **gpedit.msc**.
3. On the **Local Group Policy Editor**, navigate to the following location: **Computer Configuration** > **Administrative Templates** > **Windows Components** > **Remote Desktop Services** > **Remote Desktop Session Host** > **Device and Resource Redirection**.
4. On the **Allow audio and video playback redirection** window, enable the **Allow audio and video playback redirection** setting.

(Optional) Enable remote audio playback in the remote desktop connection client

1. Click the **Local Resources** tab.
2. In the **Remote audio** section, click **Settings**.
3. Click **Play** on this computer setting.
4. Click **OK** to save your changes.

Required Unified Call Manager resources

The Unified Call Manager (UCM) TAS plug-in is a Microsoft Telephony Application Programing Interface (TAPI) application relying on the Cisco TAPI Service Provider (Cisco TSP) to integrate into the CUCM IP phone system. For the UCM TAS plug-in to work correctly, the UCM server and TSP client need to be set up properly.

This section describes the UCM resources that must be made available to the TAS plug-in and the steps to enable the TAS plug-in to work with UCM.

Cisco call manager set up

- Resources: Some of the Call Manager resources must be created and made available for the TAS to be functional. This is done by accessing the UCM Administration site on the UCM server.
- Users: Users are necessary to enable the TAS to access the requisite UCM resources and connections. See the *BlackBerry AtHoc NDS Installation and Configuration Guide*. In UCM 7.x, 8.x, or 10.5, users refer to Application Users. In UCM 4.x (with NDS 1.1.x) users refer to simple users. Users require the following:
  - A user ID for each user defined to use the TSP configuration.
  - A password for each user defined to use the TSP configuration.
  - Cisco Telephony Integration (CTI) use enabled in UCM 8.x, 9.x, 10.x, 11.x or 12.x (up to 12.5), by adding the user to the Standard CTI Enabled group or modifying the roles so that the user has access to standard CTI use. In UCM 4.x, click **Enable CTI Application Use**.
  - Devices such as CTI Ports and CTI Route Points that are created for TAS use must be associated to the user.
- CTI Ports: TAS uses CTI Ports or CTI Lines to handle outgoing and incoming calls. CTI ports must be associated with the UCM users.

  Note: CTI Ports and Route Points should not be share between different users.

  BlackBerry AtHoc CTI Ports have the following characteristics:

  - They are members of the default device pool.
  - They have the standard common phone profile.
  - They have the standard non-secure SCCP profile.
  - They have one directory number with no voice-mail and the standard presence group.

- CTI Route Points: TAS uses CTI Route Points to manage incoming calls. Only one Route Point is required per NDS Server and it can be associated with the TSP user of your choice. Make sure to indicate the phone numbers for this Route Point in the TAS plug-in configuration. For more information, see Configure the TAS plug-in. BlackBerry AtHoc CTI Route Points have the following characteristics:
  - They are members of the default device pool.
  - They have one directory number with no voice-mail and the standard presence group.
  - The maximum number of calls that a CTI Route Point can be set to is 10,000, but there is no requirement to do so.

Cisco telephony service provider

The Cisco-specific plug-in, called the Telephony Service Provider (TSP) or Media Driver, should be installed on the same server where the TAS plug-in has been deployed.

Prerequisites

- Always uninstall a previous version of the TSP before downloading a new version
- UCM Application user credentials
- UCM Publisher node IP Address

Download and install Cisco TSP

1. Download the TSP from the UCM administration site that is used with the TAS.
2. Click **Application** > **Cisco Unified CM Assistant Configuration Wizard** > **Plugins**.
3. In the **Plugin Name** column, click **Cisco TAPI 64-bit Client**.
4. On the **Cisco Unified Comunications Manager TSP** window, click the **User** tab.
5. Enter UCM application user credentials that were created in Cisco call manager set up.
6. Click the **CTI Manager** tab and specify the IP address of the UCM publisher node. The Backup CTI Manager is the failover server. Use the same IP address as the primary if the backup is not available.
7. Click the **Security** tab and enter the IP address of the publisher node in the **IP Address** and **TFTP Settings** field.
8. Click **OK**.

This completes the installation of the Cisco Media driver on CUCM.

Each CTI line takes 4 ports, so 500 lines requires 2000 ports.

Upgrade Cisco TSP to version 10.5

If you have a version of TSP prior to V10.5, you need to upgrade Cisco TSP. Before you upgrade, copy the current settings so that you can configure the upgraded version.

Tip: Take screen captures of the values described in all the steps.

Save Cisco TSP settings

1. Log in to the server where TAS is installed.
2. Go to the **Start** menu and search for **Cisco**.
3. Click **Cisco TSPx64 Configuration**.
4. On the **Cisco Unified Communications Manager TSP: CiscoTSP001.tsp** properties window, click the **User** tab.
5. Copy the User Name and Password values for configuring the upgraded version.

   Tip: Take a screen capture of the dialog.
6. Copy the values in the other tabs.
7. Click **Cancel** to close the properties.
8. In the **Start** menu, select **Cisco Media Driver Configuration**.

9. On the **Cisco Media Driver Configuration** dialog, copy the values.

   Tip: Take a screen capture of the dialog.
10. Click **Cancel** to close the properties window.

Uninstall UCM TSP

1. Open the Control Panel and open **Programs and Features**.
2. Right-click **Cisco Unified Communications Manager TSP-64Bit** and select **Uninstall**.
3. Download and install TSP V10. For more details, see Download and install Cisco TSP.

Restore the TSP settings

1. In the **Start** menu, select **Cisco TSP Configuration**.
2. Enter the values that you saved in all tabs.
3. Click **Save**.
4. In the **Start** menu, select **Cisco Media Driver Configuration**.
5. Restore the values that you saved.
6. Click **Save**.

Reference information

The following sections provide additional information resources.

BlackBerry AtHoc reference information

See the *BlackBerry AtHoc NDS Installation and Configuration Guide* if you do not have a Cisco TSP Wave Driver installed on the NDS.

Cisco reference information

Cisco provides a Readme text file in the following directory. `<Install Drive>\Program Files\Cisco \ciscotsp.txt`

The Readme file explains how to install, uninstall, configure, or re-configure a TSP instance and its Wave Driver.

Note: Modifying the number of automated voice lines in the TSP Wave Configuration screen requires that you install the Wave Driver again.

Required UCM services

To make the AtHoc Telephony Service functional, make sure that the following required UCM services are enabled at all times:

- Cisco Call Manager
- Cisco TFTP
- Cisco CTI Manager

For more information about the administration procedures for the UCM services, see the Cisco UCM documentation.

Configure CUCM for Hosted TAS

CUCM is used to help manage alerts with Hosted TAS.

Create Cisco telephony integration lines

Cisco Telephony Integration (CTI) lines are created to deliver alerts.

Note: Perform the following steps on an XP Server. If you do not have access to an XP server, call BlackBerry AtHoc technical support for assistance.

Path: `CM Admin > Bulk Administration > Upload/Download`

1. Log in with your user name and password.
2. Open the `BAT.xsd` file.

   The BAT.xsd file defines the CTI phone lines. You edit this file to create CTI lines.
3. Select `BAT.xlt`.
4. Click **Save**.
5. Select **Open and Enable this Content**.
6. Click **Phones**.
7. Select **CTI Port** and click **Create File Format**.
8. Select **Directory Number** in the **Line Fields** list and click **>>** to move the item to the Selected Line Fields list.
9. Click **Create** and click **Yes** when a pop-up screen asks you if you want to overwrite the existing CSV format.
10. In the **MAC Address/Device Name** column of the **Phones** tab, add a device name for each CTI line.

    For example: CTILine1, CTILine2.
11. Optionally, in the **Directory Number 1** column, enter the unique number of the associated directory number.

    Create one row for each directory number. Use sequential numbers. For example, 14001.

    Note: This number must be in the range of directory numbers specified in the Nodes **Starting Directory Numbers** and **Ending Directory Numbers** fields found under **CUMC** > **System** > **Nodes** in the **Starting Directory Numbers** and **Ending Directory Numbers** fields.
12. Click **Export to BAT Format** to create the updated `BAT.xlt` file.
13. Enter a name and save the file. For example, `myBAT.txt`). The .csv file is created with a TXT file type. Save this file name because you need to access it in a later step.

Insert the CTI lines

1. Download the CTI .bat file. For example, myBat.xsd:
   a. Go to **CM Admin** > **Bulk Administration** > **Upload/Download Files**.
   b. On the **Find and List Files** window, click **Add New**.
   c. On the **File Upload Configuration** window, in the **File** text box, enter the full path of the file that you want to upload or click **Browse** and locate the file. For example, myBAT.txt.
   d. Select **Phones** from the **Select the Target** list.
   e. Select **Insert Phones-Specific Details** from the **Transaction Type** list.
2. Run the .bat file.

   Important: You must run the .bat file on a Windows XP server. If you do not have access to an XP server, contact BlackBerry AtHoc technical support for assistance.

a. Go to **CM Admin** > **Bulk Administration** > **Phones** > **Insert Phones**.
b. On the **Insert Phone Configuration** screen, select the exported file.
c. Select **File Name** and in the **phone template** name, select the template name that you previously created. For example, CTI Lines.
d. From the **Phone Template Name** list, select the template created in the previous section. For example, CTI Lines.
e. Select **Run Immediately**.
f. Click **Submit**.

3. Check the job status by navigating to **Bulk Administrator** > **Job Scheduler**.
4. Locate the job by sorting on timestamp and contents.

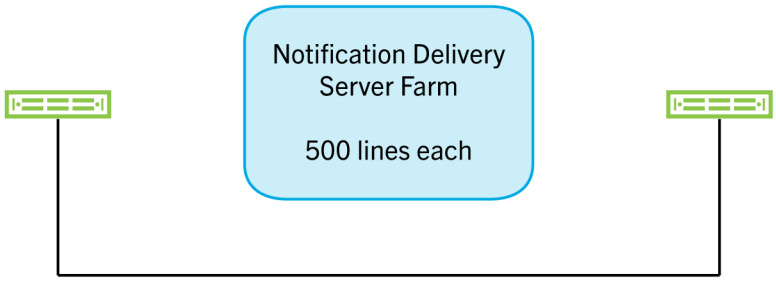
   The status is given in the log.
5. To reset the phones, navigate to **CM Admin** > **Bulk Administration** > **Phones** > **Restart Phones**.

   Note: If the phones inserted are of the type Cisco Unified Mobile Communicator, then you must reset the devices after the insert job is completed.

NDS Resource Pool Management

When getting started with NDS, you must first specify a resource pool. This section describes how to open the Resource Management screens and size a resource pool for an NDS system.

A Resource Pool can be a single Notification Delivery Server or a linked group of Notification Delivery Servers configured to work as a farm. The following graphic shows a farm configuration with 500 lines for each of the two servers. In this example, the farm configuration has a total of 1,000 lines and the farm counts as a system.



Assign resource pool sizing

The resource pool sizing is applied at the system-level NDS. A system-level NDS can be a single NDS device or multiple NDS devices configured as a farm.

1. In the NDS console, click **Management** > **Resource**.
2. Select **UcmTas** to size the UcmTas device type.
3. In the **Pool Size** column, enter the pool size, which can be calculated by multiplying the number of lines in an NDS system by 1.25.
4. Click **Save**.

Manage accounts for Hosted TAS

This section describes how to create a new account and set up a new user.

Create a new account

1. In the NDS console, click **Management** > **Account**.
2. On the **Account Management** screen, click **New Account**.
3. On the **New Account** window, enter the Display Name, which is the name used when configuring the hosted TAS delivery gateway on the BlackBerry AtHoc management system. Set the following defaults:
   - **Status**: Active
   - **Enable anonymization**: Selected
4. Click **Save**.

Set up minimum and maximum concurrent connections

You can configure resource support levels for each account by device type and resource type.

1. In the NDS console, click **Management** > **Account**.
2. Highlight the account that you want to configure.
3. Click the **Account Resource** tab.
4. In the **Support** column, select the **UcmTAS** device check box.
5. Select the **IsPrimary** check box.
6. Select **Concurrent** in the **Resource Type** list.
7. Enter values in the **Max Concurrent Connections** and **Min Concurrent Connections** columns.

Note: Multiply 1.25 times the total number of lines assigned to this account as the maximum and minimum concurrent connections value to ensure that the lines are available when required.

Configure NDS resources and set up the TTS dictionary

Identify the correct sound for a key phrase and acronyms. For example, the acronym DOE would be pronounced “doh-e” rather than as three separate letters, “D” “O” and “E” when the text of a message is translated to speech for an alert placed from BlackBerry AtHoc to a telephone device.

1. Highlight the account number that requires a term clarification.
2. Open the **Account Resource** tab for that account number.
3. Select the **Phone Prefix Throttling** tab for the account.
4. In the **Item Detail** field, enter the following values:
   a. The keyword as it appears in BlackBerry AtHoc.
   b. Each letter of the acronym with a space between each letter to ensure that the acronym is announced properly, in the voice alert.
5. Click **Save**.

Throttle a PBX phone prefix

To prevent PBX systems from having too much phone traffic, you can limit concurrent telephone calls. Limiting the number of calls is called PBX throttling and it is essential when you have PBX systems with a limited number of incoming telephone lines.

1. In the NDS console, click **Management** > **Account**.
2. Highlight a specific account.
3. Select the **Phone Prefix Throttling** tab in the **Account details** section on the bottom of the NDS console.
4. In the **Item Detail** section, enter the following values:
   - In the Prefix field, type `1`, the area code, and the prefix of the phone lines without spaces or dashes.
   - In the **Line Limits** field, enter the number of lines to be used during an alert for that account.
5. Click **Save**.

Manage accounts for speaker phones

This section describes how to create a new account and set up a new user for speaker phone

Speaker phone uses the speaker feature of your phone to blast alerts as if the phone were a loud speaker.

Create a new account

Create an account only if you do not have an existing one for telephony delivery. If you have an account, complete the steps described in Set up minimum and maximum concurrent connections and select **UcmSpeakerPhone** as the device.

For detailed information about how to create a new account, see Create a new account.

Set up minimum and maximum concurrent connections

You can configure resource support levels for each account by device type and resource type.

1. In the NDS console, click **Account** > **Management**.
2. Highlight the account that you want to configure.
3. Click the **Account Resource** tab.
4. Select the **UcmSpeakerPhone** device check box in the **Support** column.
5. Select **Rate** from the **Resource Type** list.
6. Enter values in the **Max Concurrent Connections** and **Min Concurrent Connections** columns.

Note: Multiply 1.25 times the total number of lines assigned to this account as the Max and Min concurrent connections value to ensure that the lines are available when required.

Configure NDS resources and set up the TTS dictionary

Identify the correct sound for a key phrase and acronyms. For example, the acronym DOE would be pronounced “doh-e” rather than as three separate letters, “D” “O” and “E” when the text of a message is translated to speech for an alert placed from BlackBerry AtHoc to a telephone device.

1. Highlight the account number that requires a term clarification.
2. Open the **Account Resource** tab for that account number.
3. Select the **Phone Prefix Throttling** tab for the account.
4. In the **Item Detail** field, enter the following values:
   a. The keyword as it appears in BlackBerry AtHoc.
   b. Each letter of the acronym with a space between each letter to ensure that the acronym is announced properly, in the voice alert.
5. Click **Save**.

Throttle a PBX phone prefix

For detailed information about how to throttle a PBX phone prefix, see Throttle a PBX phone prefix.

Create a new user

You can create a new user in the NDS console. A user is an initiator (operator) that publishes telephony alerts and is associated with an account. You can customize the user profile for branding, billing, and tracking purposes.

1. In the NDS console, click **Management** > **User**.
2. On the **User Management** screen, click **New User**.
3. On the **New User** screen, enter the login name that is set up for the user in the BlackBerry AtHoc management system.
4. Enter and confirm the password associated with the new user.
5. Ensure that the status field is set to **Active**.
6. Optionally, add a description.
7. Click **Save**.

Add the user to an account

You need to add the user to an account, which is known as binding the user to the account.

1. In the NDS console, click **Management** > **Account**.
2. Select the account, and right-click the **Login Name** of the user that you created in the previous section.
3. Select **API** from the list to add the user with an API role.

Install the TAS plug-in

1. Navigate to the following folder: `AtHocENS\DeliveryServer\Plugins`.
2. Copy the TAS plug-in file and paste it into the **Plugins** folder.
3. Run the TAS configuration SQL file to deploy the TAS plug-in: `AtHocENS\DeliveryServer\Plugins\TAS \AtHoc.Delivery.PlugIn.UCM.TAS\AthocTelephonyService\deployservice.bat`.
4. Run the following script to register the TAS plug-in: `AtHocENS\DeliveryServer\Plugins \AtHoc.Delivery.PlugIn.UCM.TAS\AthocTelephonyService\AthocTelephonyService.reg`.
5. Run the TAS configuration SQL file to configure the TAS plug-in: `AtHocENS\DeliveryServer\Plugins \TAS\AtHoc.Delivery.PlugIn.UCM.TAS\Installation`.

Configure the TAS plug-in

All application servers have identical plug-in configurations. The same types of plug-ins share the same configuration. The load should be evenly distributed across application servers.

Open the NDS console to configure the TAS plug-in. To learn how to open the console, see NDS console.

UCMTAS plug-in parameters

The `nds.plugins.ucmtas` key contains the UCM TAS settings for an account.

The following table lists the parameters and their default settings for your system.

TAS plug-in parameter	Description
<param name="PrimaryDeviceType" value="UcmTas" />	Specifies the name of the device that receives full calls.
<param name="PrimaryDeviceTimeout" value="600" /> (in seconds)	Specifies the device execution timeout. The hardcoded default is 600 seconds and the default configuration file sets it to 600 seconds.
<param name="PrimaryDeviceMaxTasksPerExecution" value="100" /> (in seconds)	Specifies the maximum number of phone calls that can be managed for a specific device type at once. The default is 100 and cannot be negative.
<param name="SecondaryDeviceType" value="UcmSpeakerPhone" />	Specifies the name of the devices that receive speaker phone call flows (No end-user interaction is required).
<param name="SecondaryDeviceTimeout" value="600" /> (in seconds)	Specifies the device execution timeout. The hardcoded default is 600 seconds and the default configuration file sets it to 600 seconds.

TAS plug-in parameter	Description
<param name="SecondaryDeviceMaxTasksPerExecution" value="100" /> (in seconds)	Specifies the maximum number of phone calls that can be managed for a specific device type at once. The default is 100 and cannot be negative.
<param name="DeviceSystemInitPeriod" value="2000" /> (in milliseconds)	Specifies the deferred plug-in initialization attempts period. The hardcoded default is 2000 milliseconds and the default configuration file sets it to 2000 milliseconds.
<param name="ServiceRestartDelay" value="120" /> (in seconds)	Specifies the maximum number of seconds that the plug-in waits before restarting the TAS. The hardcoded default is 120 seconds and the default configuration file sets it to 120 seconds.
<param name="DeviceSelfTestPeriod" value="30" /> (in seconds)	Specifies the health analysis period in seconds. The default is 30 seconds and cannot be at or below 0 or above 3600.
<Param name =”OutCallTtsThreads”> value =”1”	Specifies number of NeoSpeech threads to be used.
<DesiredCtiPorts>5</DesiredCtiPorts>	Specifies number of CTI lines to be used. For 5 lines the value is set to 5.
<CpsThrottle>5</CpsThrottle>	Specifies calls per second.
<LineReuseDelay>0</LineReuseDelay>	Specifies delay between reuse of lines. The default is set to 0.
<InboundCallsResourceRatio>5%</InboundCallsResourceRatio>	Specifies number of lines reserved for incoming calls. The default is 5%.

TAS plug-in parameter	Description
<DailyCleanupHour>0</DailyCleanupHour>	Specifies the time at which audio files are deleted.
<UseANIPerAccount>true</UseANIPerAccount>	Specifies the setting to enable dynamic Caller ID. The default is `true`.
<IntlCallPrefix>011</IntlCallPrefix>	The dialing prefix needed to place international calls. For example, in the US and Canada: 011, EU: 00
<DomesticCallPrefix>1</DomesticCallPrefix>	The dialing prefix needed to place domestic calls. In the US and Canada:1 (no country code), Germany: 49, France: 0
<LocalCountryCode>1</LocalCountryCode>	The NDS/TAS installation location country code which determines whether a call about to be placed is domestic or international.
<RemoveLocalCountryCode>true</RemoveLocalCountryCode>	Removes the country code for domestic calls only if set to true. Can be set to “False” to dial domestic calls using the international call prefix.
<DomesticNumberLength>10</DomesticNumberLength>	The length of domestic number. For example, in the US: 10, in Iceland, 7. Note: Variable length of numbers is not supported.
<TryAddLocalCountryCodeToDomesticNumber>true </TryAddLocalCountryCodeToDomesticNumber>	Searches alerts based on recipients phone number. If this option is set to true, the local country code is added in front of the caller’s phone number for searching alert messages.

TAS plug-in parameter	Description
<TtyRepeats>2</TtyRepeats>	Specifies how may times a TTY is transmitted to the destination. The default is 2.
<TtyRepeatInterval>3</TtyRepeatInterval>	Specifies the interval between each transmission. The default is 1 second.
<GetsNumber>17106274387</GetsNumber>	Specifies the GETS (calling card) number to dial.
<GetsPrePinPause>,,,,</GetsPrePinPause>	Sets the pause duration after connection and before dialing the PIN. Add 1 comma for each .5 seconds.
<GetsPostPinPause>,,,,,,,</GetsPostPinPause>	Specifies the pause after dialing PIN and before dialing the destination number. Add 1 comma for each .5 seconds.
<GetsPostNumberDelay>,,,,,,,,,,,,,,,,</GetsPostNumberDelay>	Specifies the pause after dialing the destination number. Add 1 comma for each .5 seconds.

Data anonymization

Plug-in Key: `nds.data.anonymizationEnabled`

Anonymization enables alert content and user addresses to be anonymized daily. By default, data anonymization is enabled and is set to “TRUE”.

Enable message archival

Plug-in Key: `nds.data.message.archiveEnabled`

Disable or enable message archival to archive data and usage information. This setting is enabled by default and set to “TRUE”.

PBX throttling

PBX throttling is an account level setting. To enable this setting, the operator must create a new key and enable PBX throttling for the UcmTas device.

PBX parameters

Click **New Configuration** and enter the following values:

Key: `nds.platform.pbx.enabled`

Account ID: leave blank

Device Type: `UcmTas`

Value: `TRUE`

Extension dialing

Configure the following parameter to set up the extension dialing feature:

Plug-in Key: `nds.plugins.ucmtas.extInstructions`

Pause parameters:

Two parameters specify the pre-extension and post-extension parameters, which define the delay that an operator sets before and after dialing the extension number.

Pause override parameters

- `preExt=”,,,,”`
- `postExt=“,,,,”`

This delay is a count of number of pauses, specified with a comma‘,’. Each comma specifies a pause for .5 seconds.

Override the pauses that come from BlackBerry AtHoc using the `override` parameter.

To override the pauses, set the override parameter to “true”.

Configure the delivery template

The delivery template specifies how the call is delivered with settings such as locale, the system name, default user name, and call flow.

Plug-in Key: `nds.platform.delivery.template`

Locale attribute

The locale attribute specifies a locale code for the delivery template.

```
<template locale=”[locale code]”
```

Where *locale code* is the value specified for a particular locale.

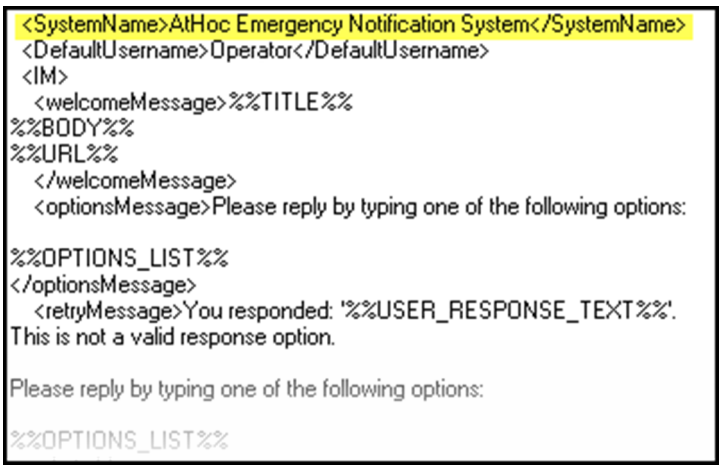
There is a template section for each locale that BlackBerry AtHoc supports. For example, en-US specifies English - United States. As BlackBerry AtHoc adds support for additional locales, template sections will be added to the key.

You can remove template sections if they are not valid for your configuration.

SystemName parameter

`<SystemName>`

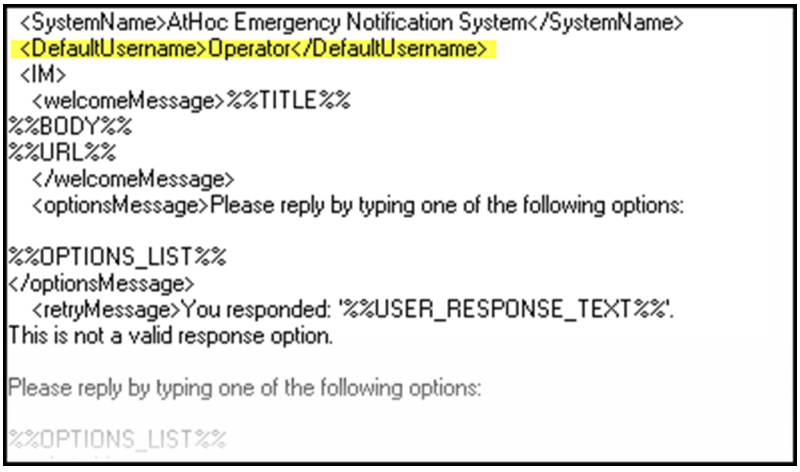
This parameter is the name of the system that originates the alerts and is identified in the phone conversation with each alert recipient. This parameter is considered a branding parameter and should be tailored to each customer.



DefaultUsername parameter

`<DefaultUsername>`

This parameter specifies the name used to greet the alert recipient if BlackBerry AtHoc cannot determine the display name, the first name, or the last name. Do not change this parameter as it is almost always certain that BlackBerry AtHoc has the user data. However, if you need to change it, modify it according to the customer requirements.



IM parameter: call flow templates

IM parameter: call flow templates

`<IM>`

The IIM parameter defines the voice sections that describe the elements or wording in a call flow. These elements contain:

- Real English expressions such as “Dial 911 to report an Emergency.”
- Punctuation such as commas, semicolons, periods.
- Variables that are replaced with real values used in a call flow (words spoken in a call) either at start-up time or at runtime, depending on the variable.

The following example illustrates what you would find in a piece of the voice section in the template1.xml file. Use the following call flow parameters:

```
<welcomeMessage>
Here is your message:
%%TITLE%%
%%BODY%%..
</welcomeMessage>
```

Text-to-speech

This section describes how to configure TAS for text-to-speech (TTS).

Text-to-speech values

Plug-in Key: `nds.textToSpeech`

The text-to-speech configuration is loaded by default and a few parameters must be specified when you configure the plug-in. There are two types of providers: NeoSpeech and SAPI.

The default configuration is:

```
<textToSpeech>
<neoSpeech neoSpeechServerName='127.0.0.1' neoSpeechServerPort='7000'
 neoSpeechVoiceFormat='13' neoSpeechLicensedLines = '4'/>
<sapi sapiSamplesPerSecond='8000' sapiBitsPerSample='8' sapiChannelCount='1'
 sapiBytesPerSecond='16000' sapiBlockAlign='2'>
<sapiVendors>
<sapiVendor sapiVendorName = 'voxygen' LicenseLimit = '0'/>
</sapiVendors>
</sapi>
</textToSpeech>
```

NeoSpeech parameters have the following default values:

- **neoSpeechServerName**: 127.0.0.1 (IP or URL of NeoSpeech TTS server)
- **neoSpeechServerPort**: 7000 (Port of NeoSpeech TTS Server)
- **neoSpeechVoiceFormat**: 13 (generated audio format, do not change)
- **neoSpeechLicensedLines**: 4 (number of licenses)

NeoSpeech server opened ports

The following are the license ports for Native NeoSpeech:

- One port license for 100-200 concurrent lines
- Two port licenses for 200-400 concurrent lines
- Four port licenses for 400+ concurrent lines
- For multi-speaker voice, use a dual port premium license.

TTS audio parameters

Plug-in Key: `nds.textToSpeech.audioParams`

Key: `<audioParams/>`

Parameters:

- speed
- volume
- pitch
- gender

The TTS audio parameters control speech speed, volume, and pitch and by default are set to the highest quality at the account level.

If the customer wants to slow the speech speed an operator can change the speech speed value based on the customer's requirement.

By default, `Volume` and `pitch` are set to '100'. You should not change the value for volume or pitch without performing the necessary testing. The gender of the speaking voice is set with `gender`.

Example

```
<audioParams speed="100" volume="100" pitch="100" gender= “female” />
```

For example, you might need to set all voices to female except for French, and a slower speed for English-United States, as shown in the following sample configuration:

```
<audioParams speed='100' pitch='100' gender = 'female'>
 <localizedConfigurations>
  <localizedAudioParams locale = 'en-US' speed='90' />
  <localizedAudioParams locale = 'fr-FR' gender = 'male' />
 </localizedConfigurations>
</audioParams>
```

TTS language providers

Plug-in Key: `nds.textToSpeech.Providers`

The text-to-speech configuration is loaded by default and should not be edited. The configuration matches the locale and gender to a unique voice for the locale and language.

Message archival

Plug-in Key: `nds.data.message.purgeArchivalDayThreshold`

Alert content is moved from the message delivery table to the archival table, which means that delivery addresses and content is archived from the payload.

Message archival is enabled by default, therefore, after a specified time the data is moved to the archival table. This configuration keeps the data in the archival table for a specified number of days before it is purged.

Configuration recommendations

Configuration name: nds.data.message.purgeArchivalDayThreshold

Recommended time limit: 6 months; enter in days as “180”.

Usage archival

Plug-in Key: `nds.data.usage.ArchivalDayThreshold`

Delivery usage data is used for billing purpose and has same lifecycle process as message archival.

Recommended time limit: 6 months; enter in days as “180”.

Message and usage purging

These configurations are used to purge the message and usage data after a specified number of hours and days.

Message purge time is stated in number of hours and by default it is set to 24 hours. Any data older than the specified value for the message archival threshold is purged every 24 hours.

Plug-in Key: `nds.data.usage.purgeArchivalHourThreshold`

Usage purge time is in number of days and by default it is set to 7 days.

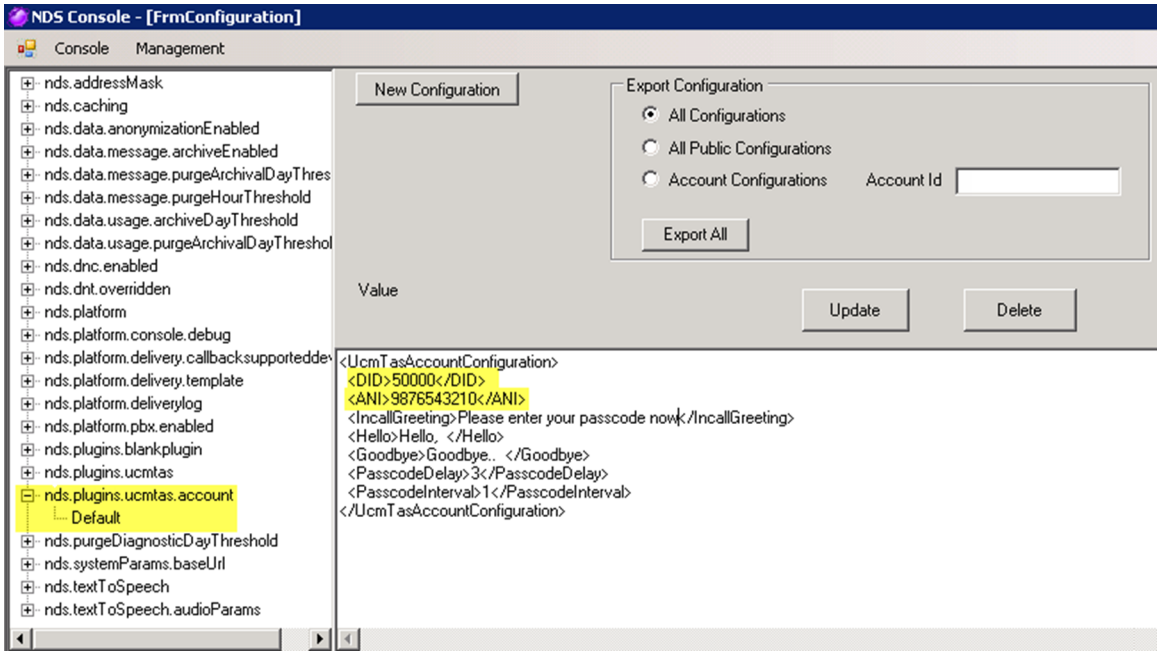
Plug-in Key: `nds.data.usage.purgeArchivalDayThreshold`

Caller ID and call back number

Plug-in Key: `nds.plugins.ucmtas.account`

- **<ANI>**: The caller ID is the number that the customer wants to display on the end-users phone screen as caller ID. This caller ID is specified as Automatic Number Identifier (ANI) in the configuration.
- **<DID>**: The call back number is used by end-users to retrieve the alert. This number is left in their voice mail and is specified by Direct Inward Dialing (DID) in the configuration. The DID number should be the same across all systems. For example, use one DID number per farm level setup.

The default configuration is at the account level, but you can override the ANI for each organization (VPS). The following image shows an example of the default configuration:

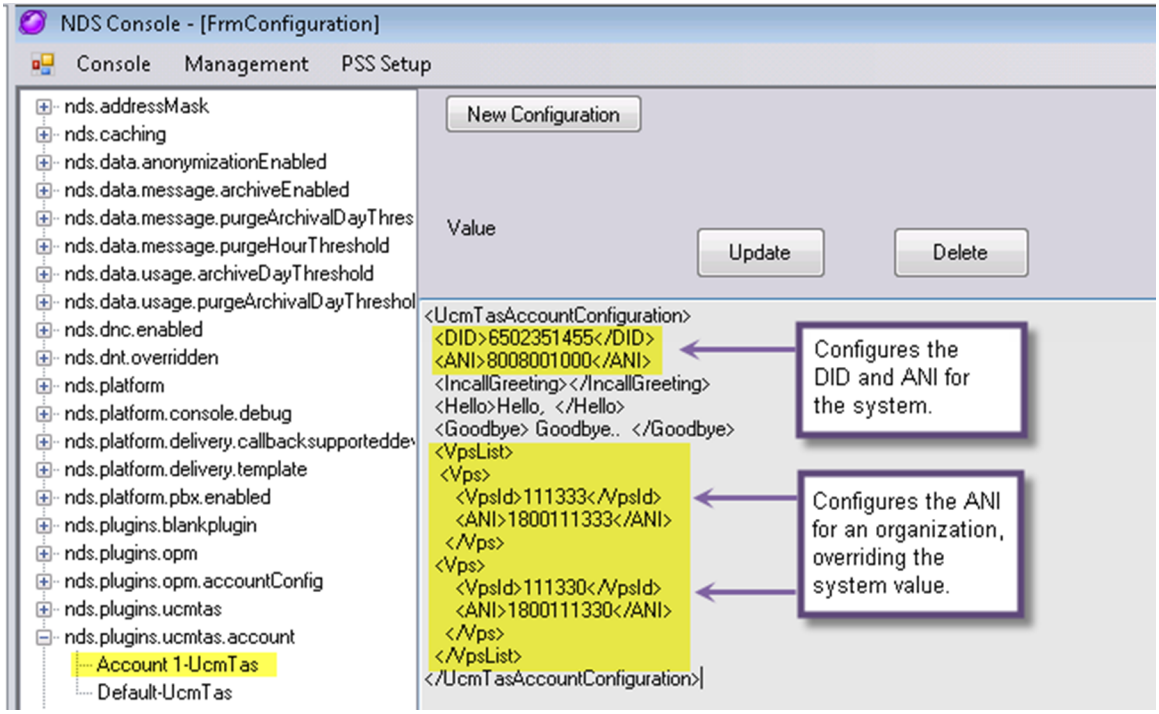


To configure different caller ID numbers for each organization, complete the following steps:

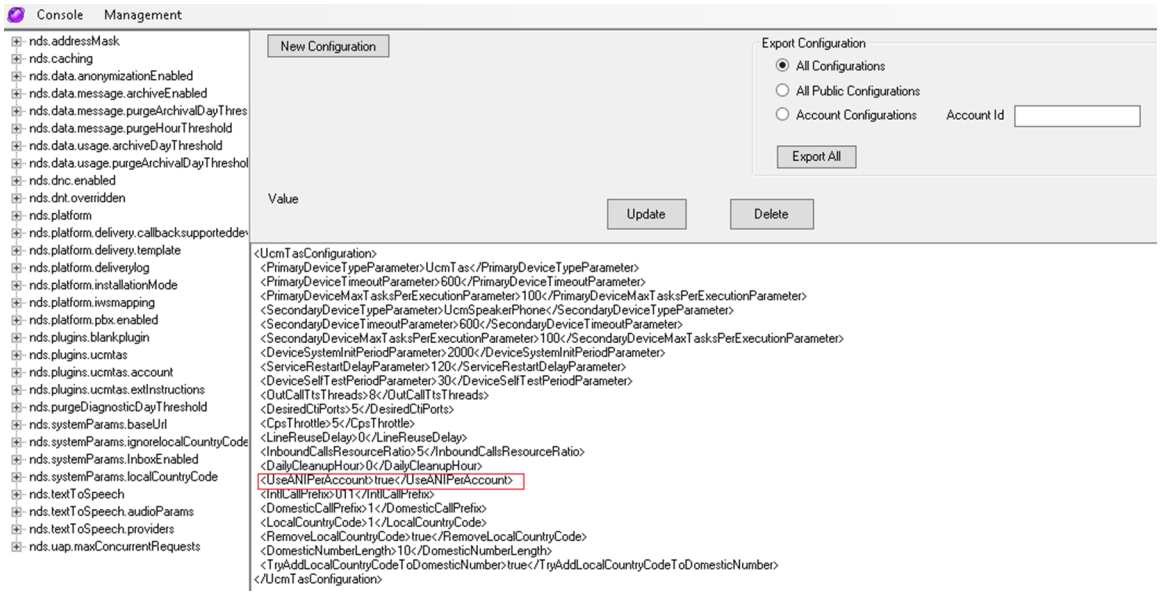
1. Expand the `nds.plugins.ucmtas.account` key and open a non-default account.
2. Add a `<vpsList>` with a `<vpsid>` attribute for each organization:

```
<VpsList>
 <Vps>
  <VpsId>6-digit VPS ID</VpsId>
  <ANI>Caller ID phone number</ANI>
 </Vps>
 <Vps>
  <VpsId>111330</VpsId>
  <ANI>1800111330</ANI>
 </Vps>
</VpsList>
```

The following image shows configuration using a non-default account customized for additional organizations:



3. Click **Update** to save your changes.
4. Expand the `nds.plugins.ucmtas` key and open the same non-default account.



5. Change the value of <UseANIperAccount> tag to “true”.
6. Click **Update**.

Phone number validation

Specify the number of digits that are used to validate a number.

Plug-in Key: nds.plugins.ucmtas.account

Key: <MinPhoneNumberDigits>

Values:

- Default: 1—No Validation
- Internal Numbers: 2-5—Used for tie-lines
- External: 10—Used for full numbers with area code

The <MinPhoneNumberDigits> parameter specifies the minimum number of digits that are required to validate a phone number. To enable validation, modify the default to one of the values listed above.

Configure multilingual support for callback

Callback refers to the menu work flow a recipient follows when they reply to a voice message from a BlackBerry AtHoc alert. You can specify which locales are available for the Callback menu and in what order the languages are listed. There are audio .wav files for each aspect of the work flow and they are available in all of the languages that are support by BlackBerry AtHoc Cloud Services. In Callback settings, the first language automatically becomes the language for the top menu in the callback flow.

1. Go to the following folder on the application server: AtHocENS\DeliveryServer\Plugins \AtHoc.Delivery.Plugin.UCM.TASx64\callback\
2. Check the locale directories to verify that the .wav files are in the folders. The file names range from 02—N9.
3. In the **AtHoc TelephonyService** folder, open the CallbackConfig file.
4. List each locale that you want to be available to callers, and in what order they should appear.

For example, your account needs to provide German, Dutch (Netherlands), and English language options, in the listed order. The configuration would look as follows:

```
<?xml version=”1.0” encoding=”UTF-8” standalone=”true”?>
<callbackLocales>de_DE nl_NL en_US</callbackLocales>
```

The following locales are supported:

Language	Locales
English	EN-US, EN-GB
French	FR-FR, FR-CA
Spanish	ES-ES, ES-Mex
German	DE-DE
Italian	IT-IT
Dutch	NL-NL
Russian	RU-RU
Korean	KO-KR
Portuguese	PT-BR
Chinese	ZH-CN
Japanese	JA-JP
Swedish	SV-SE

Note: A maximum of 9 locales can be configured in the callback menu.

5. Save the file and restart the application server.

Set up the BlackBerry AtHoc cloud delivery service gateway

After you have set up NDS and TAS, you set up the device using the BlackBerry AtHoc cloud delivery services gateway.

1. Log in to the BlackBerry AtHoc management system as an administrator.
2. In the navigation bar, click ⚙.
3. In the **Devices** section, select **AtHoc Cloud Delivery Services** gateways.
4. On the **Cloud Delivery Service** page, click **Copy default settings**.
5. Configure the Notification Delivery Server (NDS) address, Username, and Password. As you configure the service, note the following:
   - The NDS address is the server address of the NDS server.
   - The Account\User in the **Username** field is the account and username that you set up for TAS in Manage accounts for Hosted TAS.
6. Click **Save**.
7. In the navigation bar, click ⚙.
8. In the **Devices** section, click **Devices**.
9. On the **Device Manager** screen, scroll down to the phone devices.
10. Select the devices that you plan to use, such as **Phone - Emergency** or **Phone - Work**.
11. Click **Edit** and fill in the values appropriate for your organization.
12. Ensure that **BlackBerry AtHoc Cloud Delivery Service** is selected as a gateway. If it is not, click **Add a Delivery Gateway**, and select the gateway.
13. Click **Save** to return to the Device Manager.
14. From the **Device Manager** screen, select the check box for each device type used by the account.
15. Click **Enable**.
16. Verify that each device is enabled by checking the **Status** column.

Edit the properties for telephony devices

You can edit the properties for telephony devices to specify the types of end users and provide help text for targets. You can also enable or disable certain devices for the BlackBerry AtHoc Cloud NDMS gateway.

1. Log in to the BlackBerry AtHoc management system as an administrator.
2. In the navigation bar, click ⚙.
3. Click on the name of a telephony device from the **Devices** list. The details for the device open.
4. On the **device details** page, click **Edit**.
5. Update the fields as appropriate.
6. Specify the delivery gateways and click **Save**.
7. To delete the device, click **Delete**.

Configure call bridge values in an alert template

When publishing an alert, you can add a call bridge (conference call) to a response options.

1. Log in to the BlackBerry AtHoc management system as an administrator.

2. Click **Alert** > **Alert Templates**.
3. Create a new template or edit an existing template. To learn how to create alert templates, see the *BlackBerry AtHoc Manage Alert Templates User Guide*.
4. In the **Response Text** fields in the **Content** section, enter the call bridge values.
   a. Type: Select **Call Bridge**.
   b. For **Call Bridge**: Enter the conference call number.
   c. For **Pass Code**: Enter the code for the conference call. To add pauses before or in the middle of the code (for the operator to speak), add a comma for each second of pause time.
5. Finish creating or modifying the alert template and save your changes.

Configure the AthocTelephoneService (ATS) in the Registry

The AtHoc Telephony Service (ATS) parameters are the settings for the registry that configure the ATS on each application server.

- `HKEY_LOCAL_MACHINE\SOFTWARE\Athoc Telephony Service`
- `HKEY_LOCAL_MACHINE\SOFTWARE\Athoc Telephony Service\Log`
- `HKEY_LOCAL_MACHINE\SOFTWARE\Athoc Telephony Service\VoiceDetection`

After installing the application server for NDS, you need to merge parameters into the system registry on each application server.

The default values of the parameters are provided in the following file: `\package\AthocTelephonyService \AthocTelephonyService.reg`

HKEY_LOCAL_MACHINE\SOFTWARE\Athoc Telephony Service

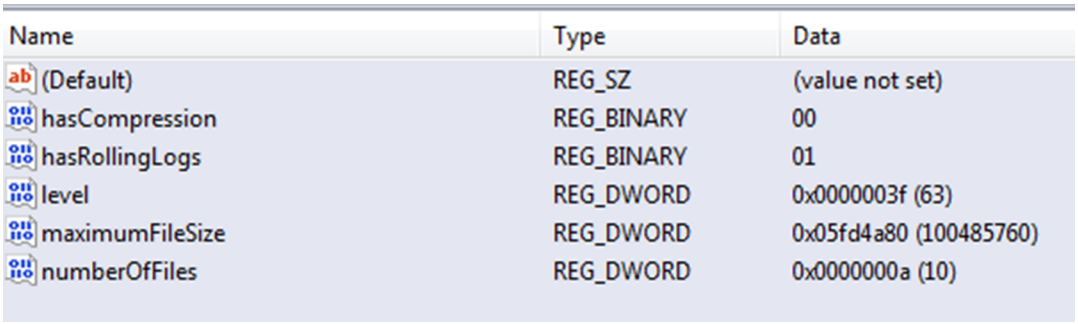
When upgrading from TAS 2.4 to TAS 2.5, manually go through the checklist on each application server and ensure the following parameter values are set correctly:

- maximumNumberOfCentreWorkerThreads (set to 120% of number of CTI ports each app server)
- maximumNumberofVoicemailRepeats = 1
- makeCallTimeout = 60 (was 120)
- acceptCallTimeout = 60 (was 120)
- inboundCallsCommunicationDelay = 30
- passcodeTransmissionDelay – OBSOLETE (controlled by commas)

The following image shows the list of registry parameters with the default values:

Name	Type	Data
(Default)	REG_SZ	(value not set)
acceptCallTimeout	REG_DWORD	0x0000003c (60)
devicesManagementPeriodicity	REG_DWORD	0x00061a80 (400000)
extraVoicemailSilenceDetectionCallTimeout	REG_DWORD	0x00000009 (9)
highestTapiVersion	REG_DWORD	0x00020002 (131074)
inboundCallsCommunicationDelay	REG_DWORD	0x0000001e (30)
inboundCallsIdentifierLength	REG_DWORD	0x00000008 (8)
inboundCallsResourceRatio	REG_DWORD	0x0000000a (10)
inboundCallsResponseCallTimeout	REG_DWORD	0x00000014 (20)
inboundCallsRetries	REG_DWORD	0x00000003 (3)
incomingCallFailureUnitFileName	REG_SZ	wav\failure.wav
incomingCallIntroductionUnitFileName	REG_SZ	wav\incoming.wav
incomingCallWrongPasscodeFileName	REG_SZ	wav\wrongpasscode.wav
introductionResponseCallTimeout	REG_DWORD	0x00000005 (5)
makeCallTimeout	REG_DWORD	0x0000003c (60)
maximumDevicesManagementRestarts	REG_DWORD	0x00000003 (3)
maximumLineServiceRestarts	REG_DWORD	0x00000003 (3)
maximumNumberOfCentreWorkerThreads	REG_DWORD	0x00000190 (400)
maximumNumberofVoicemailRepeats	REG_DWORD	0x00000001 (1)
maximumPhoneServiceRestarts	REG_DWORD	0x00000003 (3)
maximumWaveCacheSize	REG_DWORD	0x00100000 (1048576)
passcodeEndOfTransmissionDelay	REG_DWORD	0x00000000 (0)
passcodeToneWaitEquivalentPauseDelay	REG_DWORD	0x00000001 (1)
passcodeToneWaitTones	REG_MULTI_SZ	
passcodeTransmissionDelay	REG_DWORD	0x00000000 (0)
redirectCallTimeout	REG_DWORD	0x0000001e (30)
responseCallTimeout	REG_DWORD	0x0000000a (10)
serviceRestartPeriodicity	REG_DWORD	0x00005208 (21000)
serviceRestartPeriodicityHours	REG_DWORD	0x00000000 (0)
voicemailSilenceDetectionSignalDuration	REG_DWORD	0x000007d0 (2000)
voicemailSilenceDetectionThresholdPercent	REG_DWORD	0x0000005f (95)
waveOutEmissionTimeout	REG_DWORD	0x0000005a (90)

HKEY_LOCAL_MACHINE\SOFTWARE\Athoc Telephony Service\Log



Name	Type	Data
(Default)	REG_SZ	(value not set)
hasCompression	REG_BINARY	00
hasRollingLogs	REG_BINARY	01
level	REG_DWORD	0x0000003f (63)
maximumFileSize	REG_DWORD	0x05fd4a80 (100485760)
numberOfFiles	REG_DWORD	0x0000000a (10)

HKEY_LOCAL_MACHINE\SOFTWARE\Athoc Telephony Service \VoiceDetection

The following changes are needed for this registry:

TAS 2.5.1 Updates

When upgrading from TAS 2.5 to TAS 2.5.1, in each application server, merge the `AtHocTelephonyService.251upgrade.reg` file in the package. This step adds the following two registry entries with default values:

- `vmEndingSilenceNoBeepMS=3000` (in milliseconds): The period of silence during which the voice mail is detected. Although a beep is not heard, the delivery service plays the voice mail message.
- `vmEndingSilencePercent=90` (percentage): The minimum percentage of silence frames allowed for either `vmEndingSilenceMS` or `vmEndingSilenceNoBeepMS` parameters.

The following image shows the list of registry parameters with their default values:

Name	Type	Data
(Default)	REG_SZ	(value not set)
consecutiveBeep	REG_DWORD	0x00000004 (4)
consecutiveSilence	REG_DWORD	0x00000005 (5)
consecutiveVoice	REG_DWORD	0x00000005 (5)
framesize	REG_DWORD	0x00000100 (256)
halfWidth	REG_DWORD	0x00000001 (1)
humanMaxVoiceMS	REG_DWORD	0x00001388 (5000)
humanMinSilenceMS	REG_DWORD	0x00001388 (5000)
initVoiceMS	REG_DWORD	0x000001f4 (500)
min1PeakThreshold	REG_DWORD	0x00000023 (35)
min2PeaksThreshold	REG_DWORD	0x00000032 (50)
minAvgEnergyThreshold	REG_DWORD	0x000007d0 (2000)
minPeak2ToQualify	REG_DWORD	0x0000003c (60)
order	REG_DWORD	0x00000008 (8)
sig2noise	REG_DWORD	0x00000032 (50)
vdExtDialingTimeout	REG_DWORD	0x00000014 (20)
vdLog	REG_DWORD	0x00000001 (1)
vdTimeout	REG_DWORD	0x00000003 (3)
vmDetectionTimeoutMS	REG_DWORD	0x000061a8 (25000)
vmEarlyDetectionMinVoicePercent	REG_DWORD	0x00000023 (35)
vmEarlyDetectionMS	REG_DWORD	0x00002710 (10000)
vmEndingSilenceMS	REG_DWORD	0x000003e8 (1000)
vmEndingSilenceNoBeepMS	REG_DWORD	0x00000bb8 (3000)
vmEndingSilencePercent	REG_DWORD	0x0000005a (90)

TAS 2.5 Updates

When upgrading from TAS 2.4 to TAS 2.5, manually go through the checklist on each application server and ensure the following parameter values are set correctly:

- min1PeakThreshold = 35
- min2PeaksThreshold = 50
- vdLog = 0
- vdTimeout = 3 (was 2)
- vmDetectionTimeoutMS = 25000 (or larger)

Performance monitoring

TAS provides an out-of-the-box set of performance counters that you can use with `Perfmon`.

Configure performance monitoring

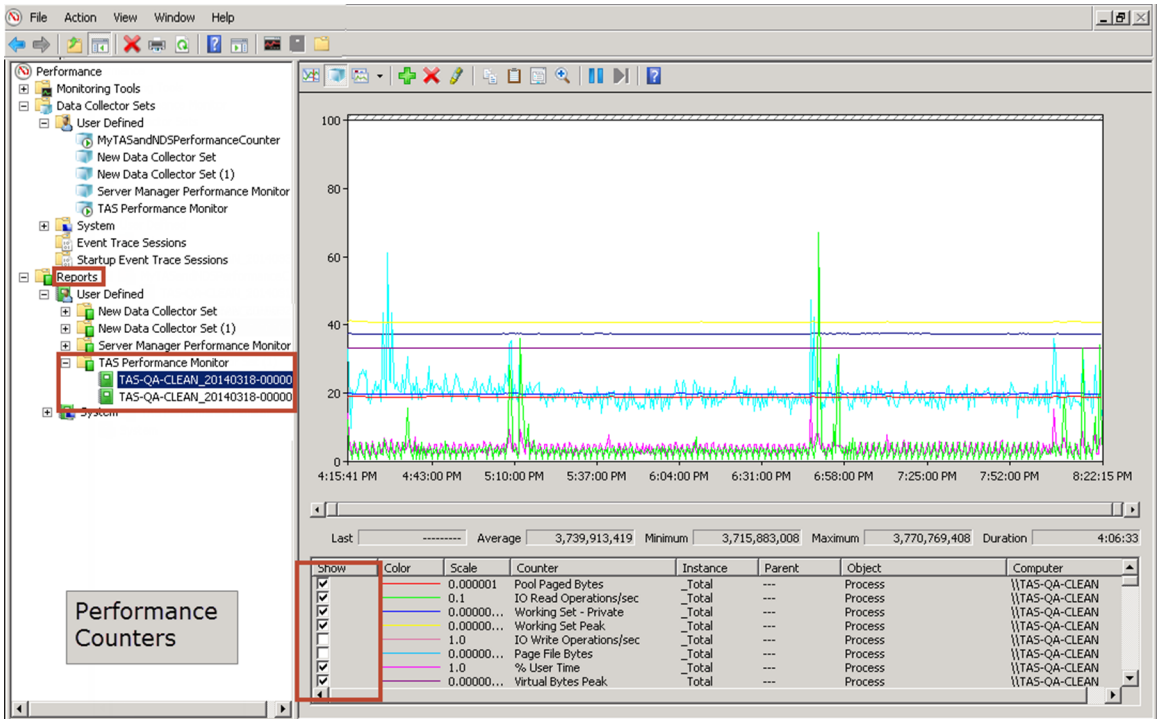
1. Log in to the NDS application server as administrator.
2. In the **Start** menu, enter **Perfmon**. The Performance monitor opens.
3. Click **Data Collector Sets**, and right-click **User Defined**.
4. Click **New** > **Data Collector Set**.
5. On the **Create new Data Collector Set** window, in the **How would you like to create this new data collector set?** window, enter a name for the performance report. For example, TAS Performance Monitor.
6. Select the **Create from a template** option.
7. Click **Next**.
8. On the **Which template would you like to use?** window, click **Browse** to select a new template.
9. Select the following file: `AtHocENS\DeliveryServer\Plugins\Template\PerformanceMonitor\AtHocCloudDeliveryPerfMon_TAS.xml`
10. Click **Finish**.
11. On the **Performance Monitor** screen, right-click the new performance counter and click **Start**.
12. The icon for the collector set changes to  to indicate that the performance monitoring has begun.

View performance reports

To view the performance report created in the previous section, complete the following steps:

1. Log in to the NDS application server.
2. In the Start menu, enter `Perfmon`. The Performance Monitor opens.
3. Click **Reports** and click **User Defined**.
4. Click the name of the report. For example, TAS Performance Monitor.
5. Click the name of your machine.

The report opens with various performance counters. You can specify which counters you want to see by selecting or deselecting the check boxes for each line.


File Action View Window Help
Performance
Monitoring Tools
Data Collector Sets
User Defined
MyTASandNDSPerformanceCounter
New Data Collector Set
New Data Collector Set (1)
Server Manager Performance Monitor
TAS Performance Monitor
System
Event Trace Sessions
Startup Event Trace Sessions
Reports
User Defined
New Data Collector Set
New Data Collector Set (1)
Server Manager Performance Monitor
TAS Performance Monitor
TAS-QA-CLEAN_20140318-00000
TAS-QA-CLEAN_20140318-00000
Performance Counters
100
80
60
40
20
0
4:15:41 PM
4:43:00 PM
5:10:00 PM
5:37:00 PM
6:04:00 PM
6:31:00 PM
6:58:00 PM
7:25:00 PM
7:52:00 PM
8:22:15 PM
Last --------- Average 3,739,913,419 Minimum 3,715,883,008 Maximum 3,770,769,408 Duration 4:06:33
Show Color Scale Counter Instance Parent Object Computer
0.000001 Pool Paged Bytes _Total --- Process \\TAS-QA-CLEAN
0.1 IO Read Operations/sec _Total --- Process \\TAS-QA-CLEAN
0.00000... Working Set - Private _Total --- Process \\TAS-QA-CLEAN
0.00000... Working Set Peak _Total --- Process \\TAS-QA-CLEAN
1.0 IO Write Operations/sec _Total --- Process \\TAS-QA-CLEAN
0.00000... Page File Bytes _Total --- Process \\TAS-QA-CLEAN
1.0 % User Time _Total --- Process \\TAS-QA-CLEAN
0.00000... Virtual Bytes Peak Total --- Process \\TAS-QA-CLEAN

BlackBerry AtHoc Customer Support Portal

BlackBerry AtHoc customers can obtain more information about BlackBerry AtHoc products or get answers to questions about their BlackBerry AtHoc systems through the Customer Support Portal:

https://support.athoc.com

The BlackBerry AtHoc Customer Support Portal also provides support via computer-based training, operator checklists, best practice resources, reference manuals, and user guides.

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